New Hampshire Injuries, 1999 - 2001

EXECUTIVE SUMMARY

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Introduction

Injury continues to be a significant public health concern both nationally and in New Hampshire. Injuries are classified as either unintentional or intentional (e.g., homicide, physical assaults, suicide, or self-inflicted injuries). Unintentional injuries were the leading cause of death for U.S. residents between the ages of 1 - 34 years in 2000.[1] For children aged 1-14, motor vehicle (MV) traffic crashes are the leading cause of death nationally. Suicide is the third leading cause of death for Americans ages 10-24 and the second leading cause of death for ages 25-34. Homicide is the second leading cause of death for ages 15-19 and the third leading cause for ages 25-34.[2]

Trauma-related injuries were the third most expensive medical condition in the United States in 1997, costing over $44 billion, third only to heart disease and cancer. Pulmonary conditions affected the largest number of people (41 million), followed by trauma-related injuries affecting 37 million people.[3]

This report includes data from a variety of data sources –vital records (death data), hospital data (inpatient hospitalizations and emergency department visits), survey data (Behavioral Risk Factor Surveillance System), and national data (CDC's Web-based Injury Statistics Query and Reporting System). Injuries are reported in this one document to allow for a comprehensive release of data including deaths, inpatient hospitalizations and emergency department visits. The most recent years of data were used in the analyses for this report. When necessary, multiple years of data were combined to ensure statistical significance.

This report is organized into three major sections by injury intent (unintentional, self-inflicted, and assault). For example, one section of this report is dedicated to unintentional injuries. Within this section, all severities of injury events are discussed. "Severity" in this report refers to whether injuries resulted in death, inpatient hospitalization, or Emergency Department visits. Each section is further broken down into specific topics. The most common causes of injury for each intent were chosen for the in-depth analysis sections.

There are many prevention programs throughout the United States and within New Hampshire. Although not all programs could be included, program information has been given for some New Hampshire programs working within the topic areas covered in this report. In addition, general NH injury resources that provide injury prevention support to all areas of injury are included at the end of the report.

Differences Between New Hampshire and the Nation

- New Hampshire's crude injury death rate (defined as the number of injury deaths per 100,000 New Hampshire residents) was 38.8 injury deaths per 100,000 in 2000, which is lower than the US rate of 53.7 injury deaths per 100,000 in 2000.

- New Hampshire's age-adjusted emergency department visit injury rate (defined as the number of injury emergency department visits per 100,000

New Hampshire residents) was 10,920.8 injuries per 100,000 in 2001. The national rate was 10,712.6 injuries per 100,000 in 2001.

- The age-adjusted homicide rate in New Hampshire was lower than the national rate for 1999-2000, with rates of 1.5/100,000 for NH and 6.2/100,000 for the US.[4]

- The age-adjusted suicide rate in New Hampshire was similar to the national rate for 1999-2000; NH's rate was 10.9/100,000 (9.6-12.2) and the national rate was 10.7/100,000 (10.6-10.8). New Hampshire's suicide rate was significantly higher than the Northeast (CT, MA, ME, NH, NJ, NY, PA, RI, and VT) rate of 7.9/100,000 (7.8-8.1).[4]

Highlighted Results from *New Hampshire Injuries, 1999 - 2001*

In both the United States and New Hampshire, disparities among different populations can be studied by looking at deaths and inpatient hospitalizations. In New Hampshire we also have emergency department visit data that adds another layer to our understanding of injury. Differences between injury intents, severities, and causes can also be seen when comparing these data sources.

The cause/mechanism of injury can vary by both intent and severity. For example, firearms are a very lethal mechanism of injury. However, overexertion injuries never result in a death and usually result in an ED visit, if anything. In NH, the mechanism most commonly resulting in an injury depends on the injury intent. Unintentional injuries are likely motor vehicle traffic crashes or falls. However, assault and self-inflicted injuries are usually the outcome of more violent mechanisms such as cut/pierce, struck/by, and firearms. An exception to this phenomenon would be the mechanism of poisoning that is seen throughout all intents at high rates.

Overall Injury: Differences in injury severity exist between genders

Although injuries affect everyone, there are some populations that are at a greater risk of injury. In general, males are at a greater risk of injury than females because they participate in more risky behaviors such as participating in potentially dangerous sports and leisure activities, not wearing seat belts, and perpetrating violent acts.[2] In regards to self-inflicted injuries, males are more likely to choose a more lethal method of attempting suicide and therefore have a higher completion rate. Females, on the other hand, choose less lethal methods such as poisoning, and therefore have higher rates of inpatient hospitalizations and emergency department rates.

- Twice as many males died from injuries than females in the years 1999-2001.

- Females make up 54.6% of all NH inpatient hospitalizations due to injuries in the years 1997-2001. In the entire US, hospitalizations are equally males and females.[5]

- Males make up 56.6% of all NH injury-related emergency department visits in the years 1999-2001.

Unintentional Injury

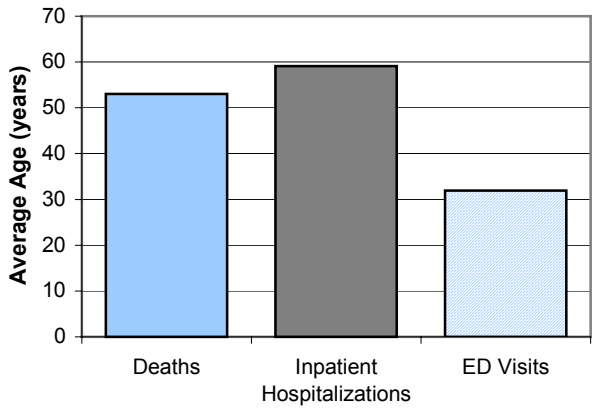
There are some age groups that are more susceptible to injury than others. Children and young people withstand injury better than the elderly.[6] Due to this fact, it is much more likely for the young population to be treated at an emergency room instead of having to be admitted to the hospital.

The average age of unintentional injury patients varies by the severity of the injury.

As shown in Figure 1, there were significant differences between the average ages and severity of injury to New Hampshire residents.

- Among the injury severity groups, unintentional injury-related emergency department (ED) visit patients had the youngest average age (31.9 years).
- The average age for deaths due to unintentional injuries was 53.0 years.
- Inpatient hospitalizations due to unintentional injuries had the highest average age of 59.1 years.

Figure 1. Average Age of Unintentional Injuries by Injury Severity, NH Residents, 2001



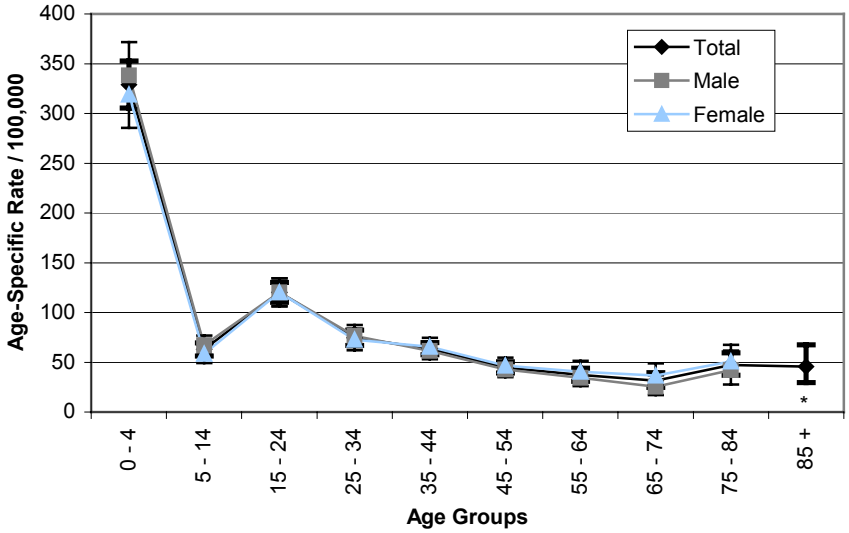
Age Group 1-4 years has significantly higher rates for some unintentional injury-related ED visits compared to other age groups.

Infants and young children are at a greater risk of injury because they are curious and like to explore their environment, have limited physical coordination and cognitive abilities, and are still developing a bone and muscle structure. When compared to rates of other age groups, children in New Hampshire ages 1-4, have significantly higher unintentional injury-related rates for two specific causes of injury:

- Unintentional Fall Injuries –The unintentional fall injury-related ED visit rate for the 1-4 year age group was 4,538.0/100,000 (4,440.9-4,635.1) in the years 1999-2001.
- Unintentional Poisoning Injuries – 52.5% of all the poison exposures in the United States in 1999 occurred to children younger than 6

years.[2] In New Hampshire, young children under age five had the highest rate of unintentional poisoning-related ED visits, 329.0/100,000 (305.4-352.6), in the years 1999-2001 (Figure 2).

Figure 2. Unintentional Poisoning Injury-Related ED Visit Rates by Age Group and Gender, 1999-2001



I 95% confidence interval for the statistic; overlapping bars indicate no significant difference.

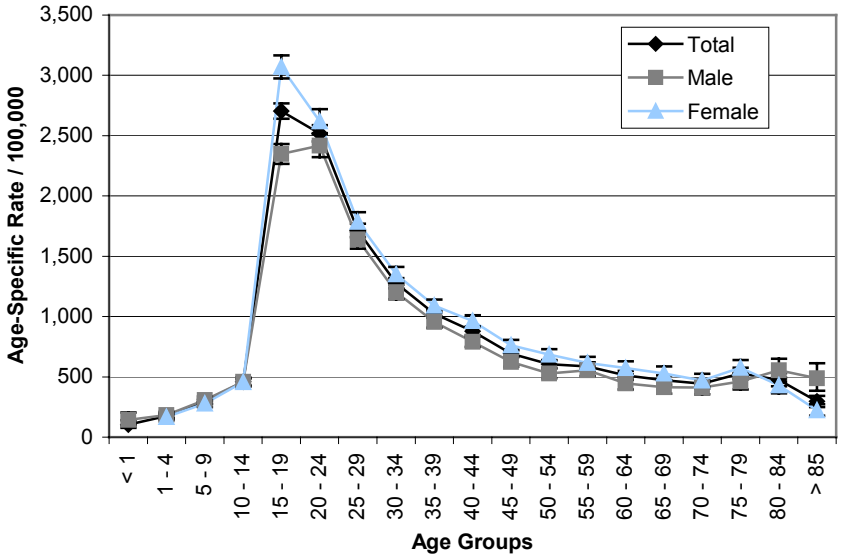
* Unable to calculate rate due to a frequency less than 20.

Age Groups 15-19 and 20-24 years have significantly higher rates for some unintentional injuries compared to other age groups.

Teens are inexperienced drivers who are at a much greater risk than the rest of the population to be involved in a motor vehicle crash. When compared to rates of other age groups, New Hampshire residents ages 15-24, have significantly higher injury-related rates for the following causes of injury by intent:

- Unintentional Motor Vehicle Traffic Injuries –
  - The 15-24 year age group MV death rate was 19.7/100,000 (15.9-24.2) in 1999-2001.
  - The 15-19 and 20-24 year age groups had inpatient hospitalization rates of 104.1/100,000 (94.3-113.8) and 99.0/100,000 (88.3-109.7), respectively in the years 1997-2001.
  - The 15-19 and 20-24 year age groups had the highest ED visit rates of 2,703.6/100,000 (2,640.4-2,766.8) and 2,519.2/100,000 (2,450.7-2,587.7), respectively in the years 1999-2001 (Figure 3)

Figure 3. Unintentional Motor Vehicle Traffic Injury-Related ED Visit Rates by Age Group and Gender, 1999-2001



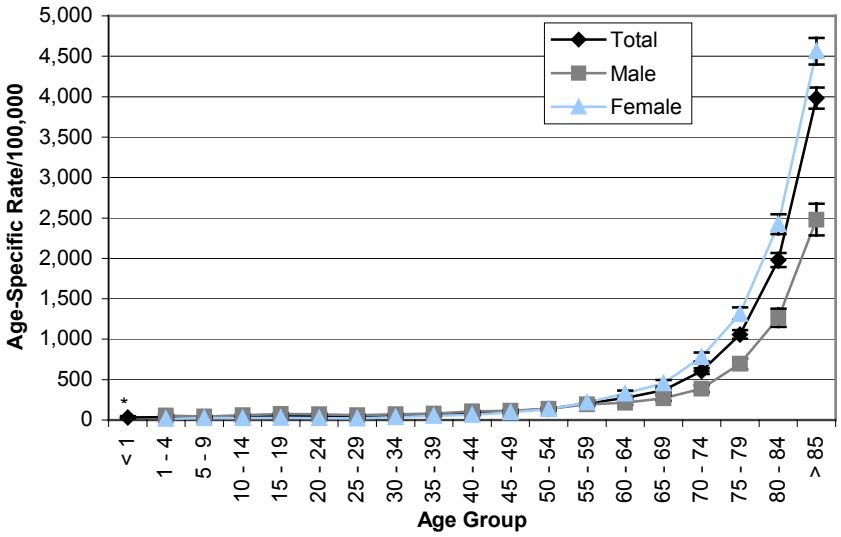
Elderly Age group has significantly higher rates for some unintentional injuries compared to other age groups.

The elderly are at a much greater risk of many unintentional injuries than any other age group. This age group may be at greater risk due to slower reflexes, vision problems, or mental illness. In addition, the injury severity may be increased for this population due to comorbidities and decreased bone density.[2] When compared to rates of other age groups, elderly New Hampshire residents have significantly higher unintentional injury-related rates for two specific causes of injury:

- Unintentional Fall-Related Injuries –The elderly suffer from the highest rates of inpatient hospitalizations for fall-related injuries (Figure 4).

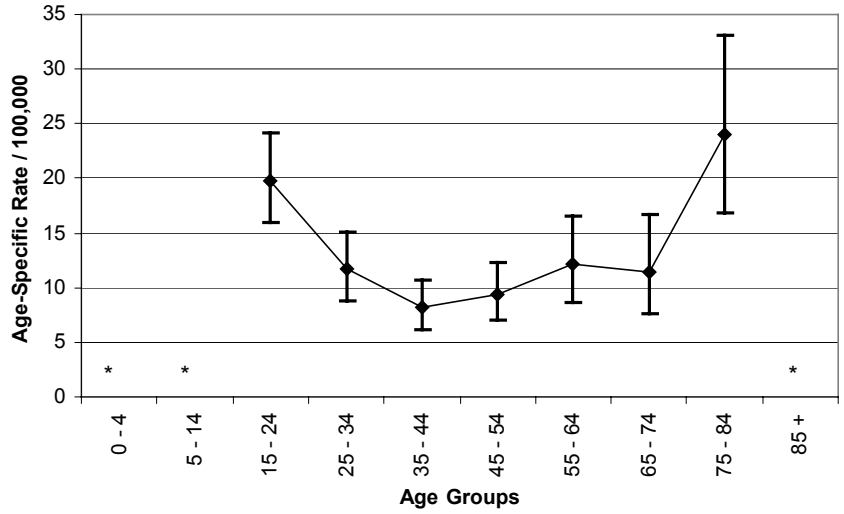
- Unintentional Motor Vehicle Traffic Injuries – The elderly have high death and inpatient hospitalization rates compared to most other age groups. The death rate for the age group 75-84 years is 24.0/100,000 (16.9-33.1) (Figure 5). The inpatient hospitalization rates increase with age, beginning at age 70 years.

Figure 4. Unintentional Fall Injury-Related Inpatient Hospitalization Rates by Age Group and Gender, 1997-2001



* Unable to calculate rate due to a frequency less than 20.

Figure 5. Unintentional Motor Vehicle Traffic Injury-Related Death Rates by Age Group, 1999-2001



* Unable to calculate rate due to a frequency less than 20.

Causes of Unintentional Injury: **The most common causes of unintentional injury vary by severity.**

- The most common causes of deaths due to unintentional injuries are motor vehicle traffic, falls, and poisoning.
- Falls, motor vehicle traffic, and poisoning are the most common causes of unintentional injury-related inpatient hospitalizations.
- The most common causes of unintentional injury-related ED visits are falls, struck by/against, and overexertion.

Assault Injuries

Children are often first exposed to violence within their family, but violence is also present in schools, workplaces, churches, and the popular media - including television, movies, video games, and music. There is strong evidence that exposure to violence, both in real life and through the media, has adverse effects. Those who are exposed to the violence can experience effects ranging from an increase in suicide ideation, physical and mental health problems, drinking and drug use. Although assaults affect a wide range of people, there are some populations that are at a greater risk of assault injury.

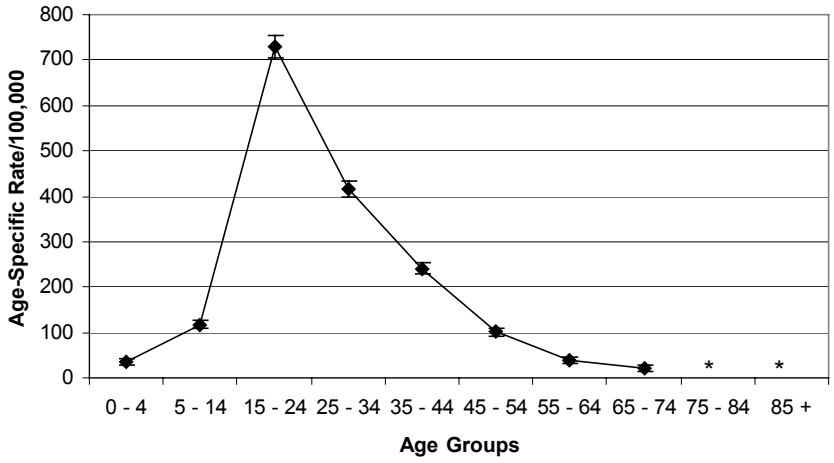
Differences in assault-related injuries exist between genders.

- More males (62.1%) than females (37.9%) were victims of assault, regardless of the severity of injury (death, inpatient hospitalization, or ED visit).
- Males made up 79.6% of the assault injury-related inpatient hospitalizations in the years 1997-2001.

Age Groups 15-19 and 20-24 years have significantly higher rates for some assault injuries compared to other age groups.

- Teens are involved in violent acts more than any other group.
- The 15-24 year age group assault injury-related ED visit rate was 730.1/100,000 (705.6-754.6) in 1999-2001 (Figure 6).

Figure 6. Assault Injury-Related ED Visit Rates by Age Group, 1999-2001



* Unable to calculate rate due to a frequency less than 20.

The most common causes of assault injury vary by severity.

- The most common mechanisms of homicides are firearm, cut/pierce (i.e. stabbing), and all transport, respectively. The "all transport" category includes the deaths due to terrorism on September 11, 2001.
- The most common causes of inpatient hospitalizations due to assault injury-related are struck by/against and cut/pierce.

- Struck by/against and other specified not elsewhere classifiable are the most common causes of assault injury-related ED visits.

Self-Inflicted Injuries

Significantly more people die from suicide each year than from homicide. While this is true for the United States as a whole, the difference between the percentage of suicides and homicides is far greater in New Hampshire than it is nationwide. Much of this is attributable to the fact that New Hampshire's homicide rate is well below the national average, while the New Hampshire suicide rate is essentially equal to the national average.

One of the strongest risk factors for suicide is a previous attempt; therefore, surveillance of suicide attempts (many of the self-inflicted injuries) can help identify high-risk populations and target prevention strategies.[7]

Differences in self-inflicted-related injuries exist between genders.

- Females made up 63.6% of the suicide deaths and self-inflicted injuries combined. However, males made up four times as many of the suicide deaths than the females. This finding reflects that males are more likely to choose a more lethal method of self-inflicted injury.

Age Groups 15-19 and 20-24 years have significantly higher rates for some self-inflicted injuries compared to other age groups.

- The self-inflicted injury-related inpatient hospitalization rate for the 15-24 year age group was 105.4/100,000 (98.1-112.7) in 1997-2001.
- The 15-24 year age group self-inflicted injury-related ED visit rate was 333.4/100,000 (316.9-350.0) in 1999-2001.

The most common causes/mechanisms of self-inflicted injury vary by severity.

- The most common mechanisms of suicides are firearm, poisoning, and suffocation. Firearms are the mechanism/cause of 47.5% of all suicides.
- The most common causes of self-inflicted injury-related inpatient hospitalizations are poisoning and cut/pierce.
- The most common causes of ED visits for self-inflicted injuries are poisoning and cut/pierce.

Notes

[1]Baker SP, O'Neill B, Ginsburg MJ, Li G (1992). The Injury Fact Book (2nd ed.) Oxford University Press Incorporated.

[2]National Center for Injury Prevention and Control. Injury Fact Book 2001-2002. Atlanta, GA: Centers for Disease Control and Prevention; 2001.

[3]Cohen JW and Krauss NA. Spending and service use among people with the fifteen most costly medical conditions, 1997. Health Affairs 22(2): pp 129-138. [Printed in Research Activities. Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services: No. 271, June 2003.]

[4]Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2002). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (producer). Available from: URL: www.cdc.gov/ncipc/wisqars. Accessed July, 2003.

[5] Institute of Medicine (US). Reducing the Burden of Injury: Advancing Prevention and Treatment. Washington (DC); National Academy of Sciences; 1999.

[6] Waller JA. Injury Control: A Guide to the Causes and Prevention of Trauma. Lexington, MA: Lexington Books: 1985: 321-329.

[7] United States Public Health Service. National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, DC: PHS; 2001.